

Executive Summary

The Coastal Conservancy completed this San Francisco Bay Area Gap Analysis in November 2002 in the hope that it would be a useful tool for regional conservation planning. This document presents the results of that analysis after scientific peer review.

The Conservancy undertook this project to achieve the following four goals:

- 1) Determine the degree of protection for natural communities provided by the existing system of open-space lands in the Bay Area.
- 2) Provide a preliminary assessment of this protection by comparing the present extent of protection to target levels of protection.
- 3) Use the assessment of protection to suggest priorities for conservation of natural communities.
- 4) Stimulate a regional discussion of conservation planning to determine what adequate protection of natural communities would look like.

“Gap analysis” was chosen as the best means of meeting these goals. It is a preliminary step in a comprehensive and systematic approach to conservation planning that identifies biotic communities or target species that are not adequately represented in currently protected land. Using a Geographic Information System (GIS), three categories of data are overlaid: land cover (includes plant communities), wildlife (provides predicted or known distribution of wildlife habitats), and stewardship (provides status of protection for all lands). The juxtaposition of the layers reveals which natural communities are found within the existing system of protected open space lands, and allows for quantification and other analyses of those natural communities found to be unprotected (the “gaps”).

The Bay Area gap analysis followed the standardized procedures of the United States Geologic Survey (USGS) National Gap Analysis Program (U.S. Geological Survey 1986), and used the land cover layer developed by the California Gap Analysis Program (Davis et al. 1998) to depict the location and extent of existing natural communities in the Bay Area (in this report, “natural communities” refers to the natural, terrestrial plant communities discussed and described, but also, by extension, to the species they may support). The Bay Area gap analysis did not develop a wildlife layer *per se*, but a wildlife layer could be developed from the data presented in this project. An original stewardship layer for the Bay Area was developed by GreenInfo Network in 2001.

The land cover and stewardship layers were compared using GIS to determine what percent of each natural community is protected by existing open space lands. This degree of protection was compared to two target percentages, or benchmark levels of protection: 100% and 20%. Communities with documented statewide declines exceeding 80% were compared to a target level of 100%, and the remaining natural communities were compared to a target level of 20%. These target numbers could be changed, however, and new results generated from the information included in this report.

Bay Area natural communities were then prioritized based on four factors: 1) endemism to the region, 2) local threat by development, 3) a combination of statewide rarity and threat level, and 4) level of statewide protection.

The analysis revealed that protected open space lands comprise 16.1% of the San Francisco Bay Area (compared to 18% statewide) and include 62 natural communities (compared to 194 statewide).

- 24 communities meet the target of 20% protection.
- 38 communities do not meet the target percentages, and thus are conservation “gaps.” Eight of these communities have documented statewide declines in excess of 80%, but do not meet the target of 100% protection in the Bay Area.
- The prioritization analysis indicates that local development threatens five of the 38 communities that do not have adequate protection (Monterey Pine Forest, Coastal and Valley Freshwater Marsh, Venturan Coastal Sage Scrub, Great Valley Cottonwood Riparian Forest, and Non-native Grassland). Two of the five threatened communities (Coastal Prairie, Northern Coastal Salt Marsh) have documented declines in excess of 80%.

The results of the San Francisco Bay Area Gap Analysis can be used to educate the regional conservation community about the successes and limitations of the current conservation reserve system, including which communities are in need of more protection and which should be future conservation priorities. This gap analysis could also be used in the preliminary stages of selecting future open-space areas. The Coastal Conservancy encourages a comprehensive regional conservation planning process, which would build upon the results of this gap analysis to improve the conservation of ecoregional diversity in the San Francisco Bay Area.